



NATIONAL SCIENCE FOUNDATION
2415 EISENHOWER AVENUE
ALEXANDRIA, VIRGINIA 22314

NSF 20-054

Dear Colleague Letter: Undergraduate Research Experiences in Advanced Technological Education (ATE-URE)

March 6, 2020

Dear Colleagues:

The NSF Directorate for Education and Human Resources invites grantees with an active Advanced Technological Education (ATE) award to submit a request for supplemental funding that supports undergraduate research experiences (UREs). All requests must describe how the funding will support the development and the implementation of undergraduate science, technology, engineering and mathematics (STEM) research experiences in the context of the ATE projects. In addition, the request must also include how the UREs will promote workforce preparation for students at two-year institutions. The ATE-URE DCL invites requests for wide-ranging, high-impact undergraduate research experiences ranging from traditional independent student research experiences to experiential learning applied research experiences. Examples of ATE-UREs include, but are not limited to: course-based undergraduate research experiences; traditional independent undergraduate student research experiences; problem-based learning; case-based learning; independent studies; capstone projects; employer-based research such as internships and co-ops; hackathons; STEM design challenges; and STEM competitions.

BACKGROUND

The ATE-URE DCL aims to support implementation and study of UREs in advanced technology learning. As a result, all projects must include evaluation and analysis of how UREs promote development of students' work skills and career outcomes. The ATE-URE DCL defines research activities broadly to include all experiences developed using the scientific method and/or engineering design processes to promote student learning by solving a problem and proposing workable solutions.

The ATE-URE DCL expects to provide supplemental funding to give students an opportunity to conduct undergraduate research in the context of an ATE-supported project, and thus help students acquire new skills and/or expand their knowledge. The ATE-URE supplements are

expected to provide high quality student experiences and examine the impact of the experiences on student learning. This funding will also provide faculty members at two-year institutions with opportunities to develop and implement novel URE projects. As a result, the ATE-URE funding will support the preparation of a technically trained workforce. The ATE-UREs may establish synergistic partnerships between two- and four-year colleges and universities, as well as with industry. Such partnerships could result in long-term collaboration on innovative UREs. Examples include, but are not limited to: course-based undergraduate research experiences (CUREs) where students study the biodiversity of various plant species using DNA barcoding, authentic independent research projects using camera traps to document and study wildlife, problem based learning with algal biofuels, hackathons, and underwater robotics competitions where students participate in building remotely operating vehicles using computer automation technology. To get a broad picture of the current state of the field, the ATE-URE supplements will support all levels of the project from the emerging idea phase to the well-established research program phase.

ELIGIBILITY

Principal investigators of current ATE awards are eligible to submit requests for ATE-URE supplements. It is expected that faculty members with relevant disciplinary expertise will have a prominent role in the project.

SUPPLEMENTAL FUNDING AMOUNT AND ALLOWABLE COSTS

Up to 20% of an existing ATE award may be requested for ATE-URE supplements. The supplemental funds may be used to support: student stipends; modest requests for equipment, materials, and supplies required for student activities; travel costs for students to complete the UREs, such as travel to competitions, internships, or research facilities; and faculty/staff salary to support implementation and evaluation of the UREs. Supplemental funds may be requested for faculty professional development opportunities, such as workshops on classroom-based research experiences and problem-based learning. Student stipends may only be requested for activities outside of normal course work. Funds should not be requested for conference travel by students, faculty, or staff.

SUBMISSION AND REVIEW

Submitters should follow the NSF Proposal & Award Policies & Procedures Guide ([PAPPG](#)), Chapter VI.E.4. In addition, the supplemental funding request must:

- Justify the URE project at the institution holding the original award. Additionally, justification for collaborations proposed with other institutions of higher education or industrial sites and how the collaborations relate to the existing award;
- Articulate the student learning outcomes and other desired impacts, with an emphasis

- on the quality of student learning experiences;
- Provide a plan to use reliable, valid assessments to measure the expected impacts of the UREs on the students and/or faculty;
- Describe specific research activities that will be conducted and how students will benefit from the experience;
- Describe how students will benefit from the preparation and participation in competitions and/or hackathons;
- Describe prior experience conducting similar initiatives and/or demonstrated ability to develop, and implement such activities;
- For projects with faculty development activities, describe follow-up activities including the implementation of the UREs in the classroom.

Before applying to the ATE-URE supplements, the Principal Investigators are strongly encouraged to initiate a conversation via email or phone with the Program Director of his/her particular NSF award. Supplemental funding requests should be prepared and submitted via FastLane in accordance with the guidance in [PAPPG Chapter VI.E.4](#). Participation of underrepresented minorities, women, veterans, and persons with disabilities is highly encouraged.

All supplements are subject to (a) the availability of funds, and (b) review of the quality of the supplemental funding request.

Proposed activities must start at any time after the supplement is granted but no later than December 31, 2020.

DUE DATES

Supplemental funding requests may be submitted at any time. For consideration for funding in FY2020, requests must be submitted no later than May 15, 2020. May 15th is also the deadline for subsequent years. However, funding in subsequent years will be dependent on availability of funds.

CONTACTS

Questions about this Dear Colleague Letter may be addressed to the following NSF Program Officers in the Division of Undergraduate Education, Directorate for Education and Human Resources:

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Sincerely,

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